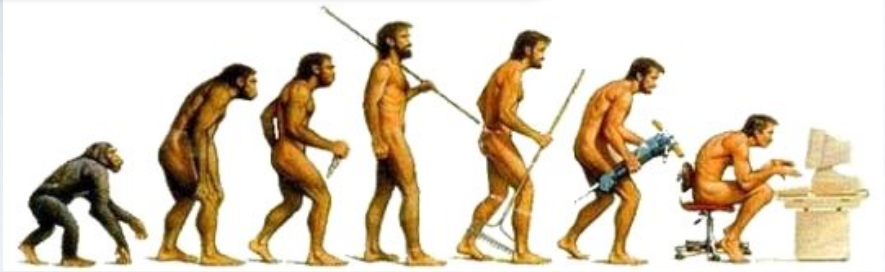

A GLIMPSE INTO THE
FUTURE
My English Class
digital e-learning

A GLIMPSE INTO THE

FUTURE

places and forms of power | the idea of progress | spaces and exchanges

DISCUSSING TECHNOLOGY



1. Analyse and comment the documents.

WHAT IS THE FUTURE OF COMMUNICATION?

understanding what is and what might be in the future...

The Internet will play an increasing role in communication. Voice over Internet protocol (VoIP) already plays a large role in several communication products and services. Sites like Facebook and Twitter allow users to communicate with networks of people. With the rise of the Web, people now have a platform from which they can address the world. In the past, only celebrities and politicians could address so many people at one time. Now, anyone with an Internet connection can do the same thing.

This may lead to changes in everything from entertainment to politics. Using the Web as a communication tool, people with aspirations may be able to find an audience more easily than ever before. It may not be long until a relatively unknown person uses the Internet to win enough support to be elected president of the United States.

So far we've looked at some fairly mundane advances in communication. But what about the distant future?

One way we might see communication change in the future is through augmented reality. In an augmented-reality system, you view the world through a technological overlay. This could take the form of a hand-held device like a smartphone -- there are several augmented-reality applications already available for some phones. Another possible application is through a set of augmented-reality glasses. In either case, you can view the world around you and see real-time digital information about what you're viewing.

The classic example of augmented reality is the restaurant review. You could stand in front of a restaurant and, through an augmented-reality system, read customer reviews or view the daily specials without ever walking inside. But the applications don't have to stop with locations. Augmented-reality systems might extend to people as well. Imagine looking at a stranger and seeing that person's name, Facebook profile, Twitter handle and other information. Clearly, augmented reality systems will raise concerns about privacy and safety, but such systems are already in development.

Then there's video conferencing. While the technology has existed for years, video calls aren't popular in the United States. It might be because the hardware hasn't been compelling or cost-effective enough. But now webcams are starting to appear on televisions and are standard on many laptops. Are we about to enter an era of video conferencing, or is it too much work to make sure you and your house look nice before you order that pizza?

One drawback to video conferencing is that it either requires you to stay in one place for the duration of the call or to hold a device so that you're visible for the whole conversation. We've become used to having a great deal of freedom while on the phone. Will we really adopt a technology that will necessitate that we keep still? Perhaps we'll use video conferencing for special occasions or short conversations.

Language barriers are disappearing as well. Devices that can translate languages in real time are allowing people from different countries and cultures to communicate without the need for an interpreter.

In the distant future, we may be able to communicate by sending our thoughts through a network directly into someone else's brain. We're decades away from such technology, but scientists are working on creating brain-computer interfaces that allow people to transmit thoughts directly to a computer. Perhaps 50 years from now we'll all use an electronic version of telepathy.

The technology of communication evolves at a blistering pace. It may turn out that our predictions don't even scratch the surface. Only time will tell.

Jonathan Strickland
electronics.howstuffworks.com

1. **Introduce the document**
2. **Can you list the inventions mentioned?**
3. **What is internet changing today in communications?**
4. **« It may not be long until a relatively unknown person uses the Internet to win enough support to be elected president of the United States » Explain**
5. **What is augmented reality?**
   - Have you ever used it?
   - What do you think about it?
6. **What changes with video conference calls?**
   - Have you ever experienced that?
7. **According to the journalist, what might be the next way to communicate in the future?**

answer the online quiz
myenglishclass.net/classes/terminales

FOUNTAIN OF YOUTH

PROGRESS IN SLOWING AGING, AT LEAST IN MICE

Scientists the world over are busy in their labs trying to figure out just where Ponce de Leon left his elusive fountain of youth. They may never find it, but new research suggests that even if we can't live a few hundred years, we may at least be able to reverse some of the degenerative effects of what scientists call the "normal aging process."

Scientists at two of the world's leading research institutions, Harvard and the University of California, Berkeley, achieved what Berkeley is calling a "major advance," if not a breakthrough, in the search for a way to stem the ravages of time.

They were able to make old mice seem young again, or at least pick up where nature left off and regenerate the production of blood cells.

They did it by injecting a longevity gene that reversed the decline that had been brought on by aging. That's no fountain of youth, but it could be a really big thing.

If scientists can figure out how to slow aging, or even repair its damages, it may be possible to curb some very debilitating diseases ranging from cancer to dementia.

"Our study is really the first one demonstrating that sirtuins (proteins known to regulate aging) can reverse aging-associated degeneration, and I think that's very exciting," Danica Chen, a Berkeley assistant professor of nutritional science and toxicology and coauthor of a study published in Cell Reports, said in releasing the paper. "This opens the door to potential treatments for age-related degenerative diseases."

One of the most important signs of aging, in all animals, is the gradual loss of the ability to maintain tissues and, especially, blood cells. In time, the body just loses its ability to generate new blood cells to replace those that have fallen along the way.

But as organisms age, the adult stem cells that are supposed to maintain and repair tissue decline in number. The researchers found that when they injected the longevity gene into aging mice, they stepped up the production of new adult stem cells, thus fending off the decline that would have been expected from normal aging. But it's even more than that. It actually repaired a system that had deteriorated because of aging.

This particular protein has been demonstrated to suppress tumors, so the possibilities are tantalizing. Could it be that simply injecting this longevity gene into a senior could someday be enough to fight cancer and rehabilitate the blood supply? It's too soon to know that, but the study ends with a positive note, suggesting that this protein – SIRT3 – may play a huge role in the years ahead.

"We speculate that SIRT3 may regulate stem cells in other tissues," the report says. "Given that adult stem cells are thought to be central to tissue maintenance and organismal survival, SIRT3 may promote organismal longevity by maintaining the integrity of tissue-specific stem cells."

But the scientists caution that "future studies" will have to decide that.

So is it the fountain of youth? It may be at least the first sip.

However, it should be noted that there is a great deal of skepticism among experts over whether human longevity can be increased significantly. Aging is a very complex process, and it is not well understood.

Thus, any discussion of the matter usually shifts quickly away from longevity. Even if we can't extend our lifespans, it should be possible to maintain the quality of life for much longer, and on that issue there is much more optimism. This kind of research may be part of the solution.

Lee Dye, ABC News, February 6th 2013

1. Introduce the document
2. Who achieved a major advance about slowing ageing?
3. How can they make a mouse seem young again?
4. What type of diseases could be treated or cured?
5. How can you define the process of ageing?
6. What could be the dangers of controlling our DNA?
7. What might be the real application of such a discovery?

answer the online quiz
myenglishclass.net/classes/terminales

ELON MUSK, A VISION OF THE FUTURE

how is elon musk going to change the world for humankind?

A combination of wild ambition and extensive resources has allowed Elon Musk to disrupt several major industries. But how might he change the world in future?

For most of us, setting up the world's most popular online payment processor would look like success. But for one South African-born entrepreneur, it was just the prelude for bigger things.

That remarkable individual goes by the name of Elon Musk. He is the founder of PayPal and SpaceX. You might also know him for his remarkably ambitious Hyperloop project, or his insane goal of establishing life on Mars.

With his billionaire swagger and technical prowess, Musk is like a real- world superhero. But are his projects really doing good for the human race? And what can we expect next from this technology titan?

Having originally hypothesized about Mars colonization in 2001, Musk entered the new space race with SpaceX. The company now makes its money delivering supplies to the International Space Station.

However, Musk has much bigger ambitions for space. Back in 2011, he stated that he wanted to send humans to Mars within 10–20 years. This March, SpaceX began building a new rocket named BFR designed for interplanetary missions. It could allow humans to take a pitstop at the Moon on the way to more distant destinations.

Musk's name is also synonymous with Tesla, although he only got involved with the company as an early investor. After Musk took over as CEO, the company started innovating rapidly.

Aside from pretty cars, the company is working on numerous green technologies. For instance, there's the Tesla Semi, an electric truck with a range of 500 miles. Tesla is also investing heavily in battery production, while the company's SolarCity unit is installing thousands of efficient solar panels on homes every month.

Hyperloop is perhaps Elon Musk's most attention-grabbing project. This tunnel-based system could allow tourists and commuters to travel at 760 mph inside sealed "pods." Although the technology is still being developed, it could soon make certain intercity flights obsolete.

His infrastructure firm, The Boring Company, has already created a tunnel under Los Angeles.

After successfully reaching Mars with SpaceX, Musk then wants to colonize the red planet. His long-term goal is to have 80,000 people living there by 2040.

Mark Myerson
July 8 2018, thegadgetflow.com

1. Introduce the document
2. Who is Elon Musk?
3. Name his most important projects.
4. Is he really a « real-world superhero »? Discuss
5. Explain his space projects.
6. What is Tesla? Explain
7. Explain his Hyperloop project,. How could this change our daily lives?
8. What is his next project? Do you think it might be possible?

answer the online quiz
myenglishclass.net/classes/terminales

IS ELON MUSK BUILDING THE FUTURE?

10 ways elon musk is changing the future

10. SUPERSONIC TRAVEL

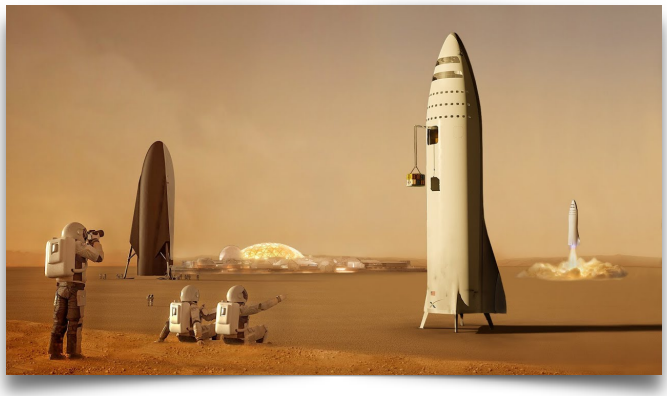
Unveiled by Musk in 2013, the super-fast Hyperloop travel concept is potentially revolutionary. The transportation system will apparently blast passenger-packed 2 meter wide pods through long tubes at about 1,220 km/h using energy derived from the sun. These pods would zoom through long tubes, which would be mounted on pylons to minimize construction costs, reduce earthquake risk and ease right-of-way issues. Musk believes the system will act as a cheaper, faster alternative to California's proposed $70 billion high-speed rail system, estimating that a Hyperloop line could be built from Los Angeles to San Francisco for $6 billion or so. Despite some scientists being skeptical about whether the Hyperloop will work, it has the potential to be completely world changing for travel. Take for instance the journey time from LA to San Francisco, typically in a car it takes 6 hours, but via the Hyperloop it would take just 30 minutes.

9. PRIVATE SPACEFLIGHT

Musk founded the private spaceflight firm SpaceX in 2002, and currently serves as its CEO and chief designer. SpaceX has already made history, becoming the first private company to deliver a spacecraft to the International Space Station. The unmanned Dragon capsule first visited the orbiting lab on a demonstration mission in May 2012, and has completed two cargo runs since. The company holds a $1.6 billion contract with NASA to make 12 such flights with Dragon and its Falcon 9 rocket. In 2017, Musk revealed proposals for one of his most ambitious projects to date- intercontinental rocket flights for passengers that will take under half an hour and cost roughly the equivalent of an economy flight on a passenger jet. SpaceX claimed that it would be able to fly from Hong Kong to Singapore in 22 minutes, New York to London in 29 minutes, and Sydney to London in 51 minutes.

8. COLONIZING MARS

Beyond intercontinental rocket flights, in the next 40 to 100 years, Elon Musk hopes to build a one-million-strong



population on Mars for the long-term future of humanity. The billionaire entrepreneur hopes SpaceX can help get the ball rolling toward such a settlement by ferrying explorers to the Red Planet for perhaps $500,000 per trip. Musk envisions 1,000 huge advanced carbon fibre ITS spaceships sitting in orbit at any one time - “kind of like Battlestar Galactica”. They would be refuelled using propellant tankers, and be capable of holding 100 crew - though this number would ideally rise to 200. Each ship is expected to have a lifespan of 30 years and 15 flights each. If the crew number onboard stays at 100, 10,000 trips will be needed to populate Mars, said Musk. Due to the time limitations on this, his estimate came to a mission length of 40 to 100 years to reach the necessary population.

7. MAKING ELECTRIC CARS COOL

When many of us think of Elon Musk, we think of Tesla, the company he founded in 2003 that manufactures electric cars and the battery packs that power them. By creating models that were visually much more desirable and affordable to the average customer, Musk has helped change the way many people view electric cars. In 2015 and 2016, the company's Model S was the world's best-selling plug-in electric car and global sales of the car reached the 200,000 unit milestone during the fourth quarter of 2017. Tesla’s success pushed other major car manufacturers towards developing their own electric vehicles, such as the Renault ZOE, BMW i3 and Nissan Leaf. By 2040, analysts now say that 54 percent of all cars sold on the planet will be electric. And if things go the way they have in 2017, those cars are more likely to be emblazoned with a Tesla Inc. logo than BMW AG’s.

6. THE GIGAFACTORY

What do you do when your electric car company's business plan requires more lithium ion batteries than the entire world produces? If you're Elon Musk, the answer is to create a giant "Gigafactory" that meets your own demands. The estimated cost of the factory is five billion dollars. Tesla is only worth just over three billion. That's a bit of a funding gap. Musk got around this problem by inciting a bidding war between states who want to host the Gigafactory, which is estimated to create 22,000 new jobs and bring 100 billion dollars into the local economy over the next 20 years. The state of Nevada won with its offer of 1.4 billion in incentives, plus free land to build the Gigafactory on. The Gigafactory is capable of making 10,000 solar panels a day, or one gigawatt of solar capacity a year. It will be the largest solar manufacturing plant in North America and one of the biggest in the world, easily becoming one of the biggest providers of alternative energy sources.

5. PIONEERING E-COMMERCE

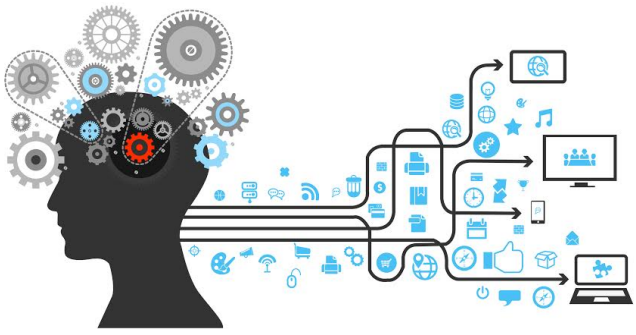
Most of you have probably bought something online using PayPal. The payment system makes it quick and easy to make a transaction, and we have Musk to thank for its success in revolutionising online payments. The story goes that Elon Musk co-founded the online financial services company X.com in 1999. A year later, X.com merged with Confinity, which had developed an online payment system called PayPal. In 2001, the company was renamed PayPal and dramatically grew in popularity, so much so that it was acquired by eBay in October 2002 for a whopping $1.5 billion. Up until the acquisition, eBay depended on physical cheques as payment. As of 2017, PayPal operates in 202 markets and has 218 million active, registered accounts. PayPal allows customers to send, receive and hold funds in 25 currencies worldwide.

4. RENEWABLE ENERGY

By now you've probably realised Elon Musk has a vested interest in the effects of climate change, so it makes sense that he's involved with a big renewable-energy venture. Musk is the chairman of SolarCity, which designs and installs clean energy systems for households, businesses, universities and other organizations. SolarCity claims its carbon footprint per unit of energy production is 95% lower than that of fossil fuel power plants and the typical SolarCity system starts delivering net carbon reductions in less than a year. The firm, which was founded in 2006, has thousands of customers across 14 states, according to its website. Musk's goal is to provide consumers with an integrated fossil free future. His solar-powered roof tiles eliminate the need for traditional panels and have a longer-lasting home battery, which Tesla calls the Powerwall.

3. THE FUTURE OF AI

When it comes to Artificial Intelligence, Elon Musk is extremely worried about the potential threat it could have on humanity. In fact, he's so worried that he pledged $1 billion in 2015 to create a non-profit organisation called OpenAI, which researches ways that we can peacefully coexist with machines. The Tesla founder fears international competition for AI could lead to World War III, believing that one of the AIs developed in the technological arms race could actually launch the triggering attack, if it determines for itself that doing so is the best probably path towards becoming the clear global leader. However, despite his reluctance to get on board with AI, in February 2018 Musk left OpenAI's board due to a conflict of interest with Tesla's own autonomous driving AI effort. Nonetheless, he has stated that he will continue to donate to and advise the organization to pre-emptively safeguard the world from the AI threat.



2. REUSABLE ROCKETS

If you've been keeping up with what Elon Musk has been doing recently, you'll know that on February 6 2018, his aerospace company, SpaceX, successfully launched his cherry-red Tesla Roadster into space. Of course it was the Tesla that grabbed the headlines, but the real success of the publicity stunt was the partially reusable Falcon Heavy launch vehicle

which is essentially three Falcon 9 rockets strapped together- that successfully landed its two outer stages in beautiful synchronisation. For years SpaceX has been creating reusable booster rockets that once used up, can descend to Earth in a controlled drop, before landing vertically on land or sea, ready to be refuelled and sent off in another flight. Typical rockets break up when re-entering the universe and are therefore very costly to remake time and time again. In fact, Musk claims that his reusable rockets will make space access 100 times cheaper and more accessible.

1. SELF DRIVING CARS

What comes after electric cars? Self-driving cars of course! Elon Musk has promised the world that a completely automated Tesla will be available by the end of 2018. Tesla's Model S already includes some self-drive features, such as the ability to change lanes automatically if there's space and adjust the cruise control speed whenever the car passes a new speed limit sign. But Musk plans to implement functionality that would allow drivers to do things such as summon their cars from the garage via their phones, at least when they're on private property. But how will self-driving cars like Tesla's change the world, apart from the ability to nap on the road? Well, thousands of lives would be saved each year. According to a study by the Eno Center for Transportation, if about 90% of cars on American roads were autonomous, the number of accidents would fall from six million a year to 1.3 million. So that's 10 Ways Elon Musk Is Changing The World, which of these do you think will have the biggest impact on the world? Let us know in the comments below. If you enjoyed this video, check out 10 Obscure Companies That Could Dominate The World In 10 Years.

1. **Introduce the document**
2. **Who is Elon Musk?**
   - What do you think about him?
3. **List and explain briefly each of Elon Musk's projects.**
   - Explain whether you think they are important, life changing or just quite commonplace.
4. **Which one is your favorite? Explain why.**

answer the online quiz
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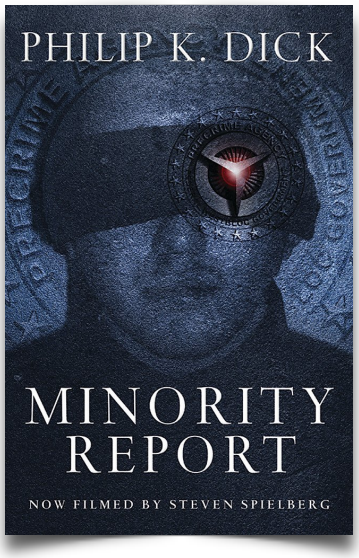
A GLIMPSE INTO THE FUTURE



the idea of progress | places and forms of power | spaces and exchanges

PREDPOL®

PREDICTING CRIMES...

how the vision from « minority report » could become a reality

People post photos every day on Facebook, read articles on their smartphones, and pay by credit card. It seems to be a meaningless everyday life, but every single action is accumulating data. It is the so-called "big data" age. The artificial intelligence (AI) that is going on now is getting more advanced thanks to big data.
Data analysis is used not only in our real life but also in the public domain. To predict the crime that is directly related to our safety.

Digital Innovation and Transformation
Harvard Business School, 2017

$$\frac{\partial A}{\partial t} = B + \frac{\eta D}{4}\nabla^2 A - \omega A + \theta\omega\delta$$

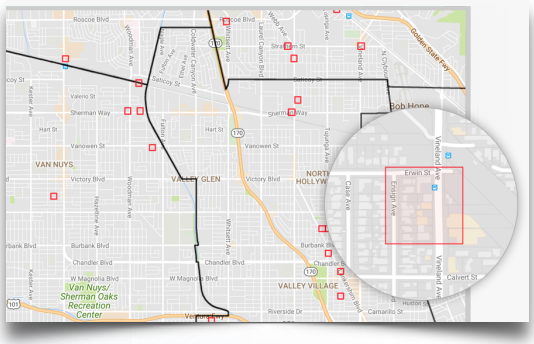
"PredPol has a precise definition of predictive policing. For us and our customers, it is the practice of identifying the times and locations where specific crimes are most likely to occur, then patrolling those areas to prevent those crimes from occurring. Put simply, our mission is to help law enforcement keep communities safer by reducing victimization.

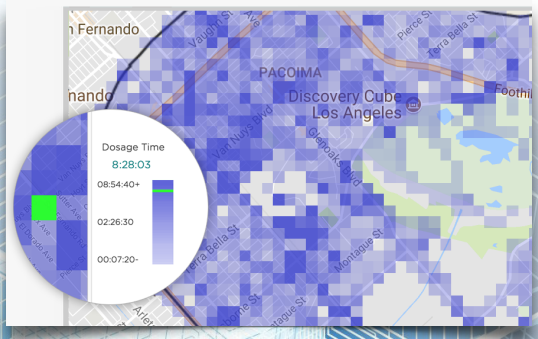
Our day-to-day operations tool identifies where and when crime is most likely to occur, enabling you to effectively allocate your resources and prevent crime.

The data we use for our predictions is very important. We make our predictions based only on victimization information, i.e. crimes that have been reported to police. This information is anonymized; no personally identifiable information is ever collected or used. We believe that protecting the privacy and civil rights of the residents of our communities is as important as protecting them from crime.

PredPol is currently being used to help protect one out of every 33 people in the United States."

www.predpol.com





PredPol grew out of a research project between the Los Angeles Police Department and UCLA. The chief at the time, Bill Bratton, wanted to find a way to use COMPSTAT data for more than just historical purposes. The goal was to understand if this data could provide any forward-looking recommendations as to where and when additional crimes could occur. Being able to anticipate these crime locations and times could allow officers to pre-emptively deploy officers and help prevent these crimes.

Working with mathematicians and behavioral scientists from UCLA and Santa Clara University, the team evaluated a wide variety of data types and behavioral and forecasting models.

www.predpol.com

1. **Introduce the document**
2. **How can people's simple online activities get companies to track them?**
3. **What is PredPol? Explain how it works.**
4. **Should the police arrest people before they commit crimes? Explain**

answer the online quiz
myenglishclass.net/classes/terminales

ARTIFICIAL INTELLIGENCE IS NOW USED TO PREDICT CRIME, BUT IS IT BIASED?

the software is supposed to make policing more fair and accountable. but critics say it still has a way to go.

What is fair?

It seems a simple question, but it's one without simple answers. That's particularly true in the arcane world of artificial intelligence (AI), where the notion of smart, emotionless machines making decisions wonderfully free of bias is fading fast.

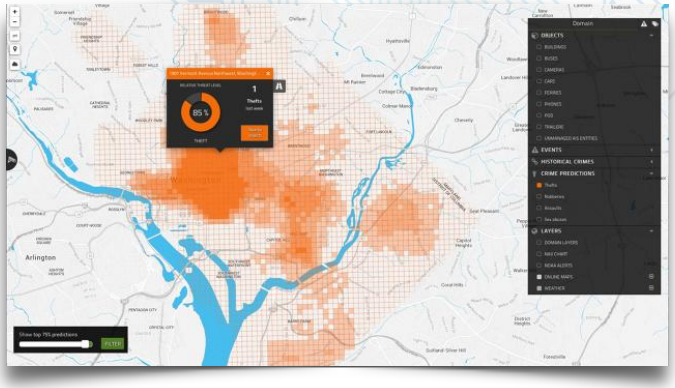
Perhaps the most public taint of that perception came with a 2016 ProPublica investigation that concluded that the data driving an AI system used by judges to determine if a convicted criminal is likely to commit more crimes appeared to be biased against minorities. Northpointe, the company that created the algorithm, known as COMPAS, disputed ProPublica's interpretation of the results, but the clash has sparked both debate and analysis about how much even the smartest machines should be trusted.

"It's a really hot topic—how can you make algorithms fair and trustworthy," says Daniel Neill. "It's an important issue."

Neill now finds himself in the middle of that discussion. A computer scientist at Carnegie Mellon University, he and another researcher, Will Gorr, developed a crime-predicting software tool called CrimeScan several years ago. Their original concept was that in some ways violent crime is like a communicable disease, that it tends to break out in geographic clusters. They also came to believe that lesser crimes can be a harbinger of more violent ones, so they built an algorithm using a wide range of "leading indicator" data, including reports of crimes, such as simple assaults, vandalism and disorderly conduct, and 911 calls about such things as shots fired or a person seen with a weapon. The program also incorporates seasonal and day of week trends, plus short-term and long-term rates of serious violent crimes.

The idea is to track sparks before a fire breaks out. "We look at more minor crimes," Neill says. "Simple assaults could harden to aggravated assaults. Or you might have an escalating pattern of violence between two gangs."

Both PredPol and CrimeScan limit their projections to where crimes could occur, and avoid taking the next step of predicting who might commit them, a controversial approach that the city of Chicago has built around a "Strategic Subject List" of people most likely to be involved in future shootings, either as a shooter or victim.



The American Civil Liberties Union [ACLU], the Brennan Center for Justice and various civil rights organizations have all raised questions about the risk of bias being baked into the software. Historical data from police practices, critics contend, can create a feedback loop through which algorithms make decisions that both reflect and reinforce attitudes about which neighborhoods are "bad" and which are "good." That's why AI based primarily on arrests data carries a higher risk of bias, it's more reflective of police decisions, as opposed to actual reported crimes. CrimeScan, for instance, stays away from trying to forecast crimes that, as Neill puts it, "you're only going to find if you look for them."

"I can't say we're free of bias," says Neill, "but it's certainly more reduced than if we were trying to predict drug possession."

Then there's the other side of the feedback loop. If a predictive tool raises expectations of crimes in a certain neighborhood, will police who patrol there be more aggressive in making arrests?

"There's a real danger, with any kind of data-driven policing, to forget that there are human beings on both sides of the equation," notes Andrew Ferguson, a professor of law at the University of the District of Columbia and author of the book, *The Rise of Big Data Policing: Surveillance, Race, and the Future of Law Enforcement.* "Officers need to be able to translate these ideas that suggest different neighborhoods have different threat scores. And, focusing on the numbers instead of the human being in front of you changes your relationship to them."

A GLIMPSE INTO THE FUTURE

The reality is that artificial intelligence now plays a role—albeit often in the background—in many decisions affecting daily lives—from helping companies choose who to hire to setting credit scores to evaluating teachers. Not surprisingly, that has intensified public scrutiny of how machine learning algorithms are created, what unintended consequences they cause, and why they generally aren't subjected to much review.

For starters, much of the software is proprietary, so there's little transparency behind how the algorithms function. And, as machine learning becomes more sophisticated, it will become increasingly difficult for even the engineers who created an AI system to explain the choices it made. That opaque decision-making, with little accountability, is a consequence of what's become known as "black box" algorithms.

"The public never gets a chance to audit or debate the use of such systems," says Meredith Whittaker, a co-founder of the AI Now Institute, a research organization at New York University that focuses on AI's impact in society. "And, the data and logics that govern the predictions made are often unknown even to those who use them, let alone to the people whose lives are impacted."

In a report issued last fall, AI Now went so far as to recommend that no public agencies responsible for such matters as criminal justice, health care, welfare and education should use black box AI systems. According to AI Now, seldom are legal and ethical issues given much consideration when the software is created.

"Just as you wouldn't trust a judge to build a deep neural network, we should stop assuming that an engineering degree is sufficient to make complex decisions in domains like criminal justice," says Whittaker.

"If these systems are designed from the standpoint of accountability, fairness and due process, the person implementing the system has to understand they have a responsibility," Schultz says. "And when we design how we're going to implement these, one of the first questions is 'Where does this go in the police manual?' If you're not going to have this somewhere in the police manual, let's take a step back, people."

It's been a learning process, says Neill, to adapt CrimeScan so that police officers at the street level believe it's helpful. "We need to show that not only can we predict crime, but also that we can actually prevent it," Neill notes. "If you just throw the tool over the wall and hope for the best, it never works that well."

He also acknowledges the risk of deferring too much to an algorithm.

"A tool can help police officers make good decisions," he says. "I don't believe machines should be making decisions. They should be used for decision support."

Neill adds, "I do understand that, in practice, that's not something that happens all the time."

Randy Rieland, march 15, 2018
Smithsonian com

1. **Introduce the document**
2. **Explain what CrimeScan is.**
   - How is is supposed to predict crimes?
3. **What information is predicted?**
   - Explain this choice.
4. **In what way would it change the way the Police works?**
5. **Is AI important in our world today. Explain.**
6. **What is a « black box » algorithm?**
   - Why could it be a problem?
   - Explain « AI Now's » recommendation.
7. **« I don't believe machines should be making decisions ». Do you agree?**

answer the online quiz
myenglishclass.net/classes/terminales

THE ROAD TO TRANSHUMANISM

OR WHAT DOES IT MEAN TO BE HUMAN?

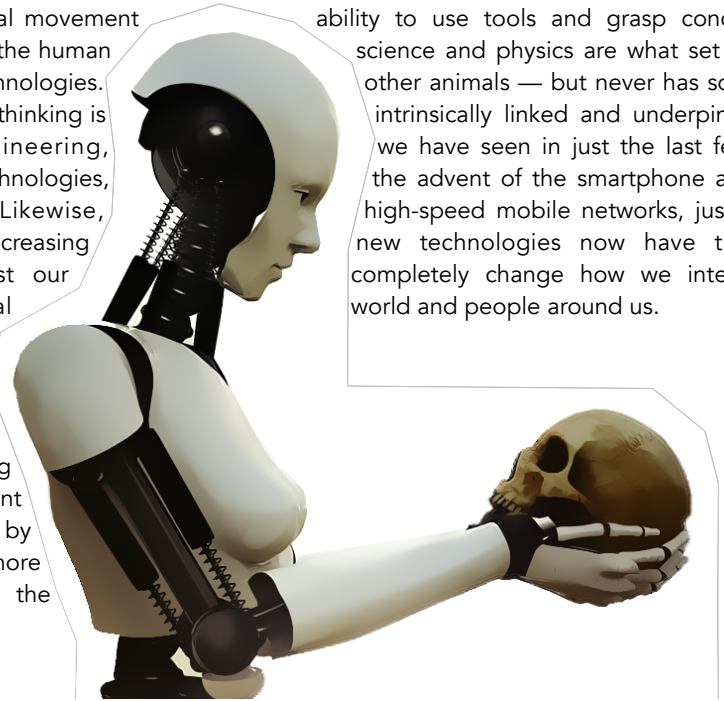
What does it mean to be human? Biology has a simple answer: If your DNA is consistent with Homo sapiens, you are human — but we all know that humanity is a lot more complex and nuanced than that. Other schools of science might classify humans by their sociological or psychological behavior, but again we know that actually being human is more than just the sum of our thoughts and actions. You can also look at being human as a sliding scale. If you were to build a human from scratch, from the bottom up, at some point you cross the threshold into humanity — if you believe in evolution, at some point we ceased being a great ape and became human. Likewise, if you slowly remove parts from a human, you cross the threshold into inhumanity. Again, though, we run into the same problem: How do we codify, classify, and ratify what actually makes us human?

Does adding empathy make us human? Does removing the desire to procreate make us inhuman? If I physically alter my brain to behave in a different, non-standard way, am I still human? If I have all my limbs removed and my head spliced onto a robot, am I still human? At first glance these questions might sound inflammatory and hyperbolic, or perhaps surreal and sci-fi, but don't be fooled: In the next decade, given the continued acceleration of computer technology and biomedicine, we will be forced to confront these questions and attempt to find some answers.

Transhumanism is a cultural and intellectual movement that believes we can, and should, improve the human condition through the use of advanced technologies. One of the core concepts in transhumanist thinking is life extension: Through genetic engineering, nanotech, cloning, and other emerging technologies, eternal life may soon be possible. Likewise, transhumanists are interested in the ever-increasing number of technologies that can boost our physical, intellectual, and psychological capabilities beyond what humans are naturally capable of (thus the term *trans*human). Transcranial direct current stimulation (tDCS), for example, which speeds up reaction times and learning speed by running a very weak electric current through your brain, has already been used by the US military to train snipers. On the more extreme side, transhumanism deals with the concepts of mind uploading (to a computer), and what happens when we finally craft a computer with greater-than-human intelligence (the technological singularity).

Beyond the obvious benefits of eternal life or superhuman strength, transhumanism also investigates the potential dangers and ethical pitfalls of human enhancement. In the case of life extension, if every human on Earth suddenly stopped dying, overpopulation would trigger a very rapid and very dramatic socioeconomic disaster. Unless we stopped giving birth to babies, of course, but that merely rips open another can of worms: Without birth and death, would society and humanity continue to grow and evolve, or would it stagnate, suffocated by the accumulated ego of intellectuals and demagogues who just *will not die*? Likewise, if only the rich have access to intelligence- and strength-boosting drugs and technologies, what would happen to society? Should everyone have the right to boost their intellect? Would society still operate smoothly if everyone had an IQ of 300 and five doctorate degrees?

As you can see, things get complicated quickly when discussing transhumanist ideas — and life extension and augmented intelligence and strength are just the tip of the iceberg! This philosophical and ethical complexity stems from the fact that transhumanism is all about fusing humans with technology — and technology is advancing, improving, and breaking new ground very, very quickly. Humans have always used technology, of course — our ability to use tools and grasp concepts such as science and physics are what set us apart from other animals — but never has society been so intrinsically linked and underpinned by it. As we have seen in just the last few years, with the advent of the smartphone and ubiquitous high-speed mobile networks, just a handful of new technologies now have the power to completely change how we interact with the world and people around us.



Humans, on the other hand, and the civilizations that they build, move relatively slowly. It took us millions of years to discover language, and thousands more to discover medicine and the scientific method. In the few thousand years since, up until the last century or so, we doubled the human life span, but neurology and physiology were impenetrable black boxes. In just the last 100 years, we've doubled our life span again, created bionic eyes and powered exoskeletons, begun to understand how the human brain actually works, and started to make serious headway with boosting intellectual and physical prowess.

We've already mentioned how tDCS is being used to boost cranial capacity, and as we've seen in recent years, sportspeople have definitely shown the efficacy of physical doping. It is due to this jarring juxtaposition — the historical slowness of human and societal evolution vs. the breakneck pace of modern technology — that many find transhumanism to be unpalatable. After all, as I've described it here, transhumanism is almost the very definition of *unnatural*. You're quite within your rights to find transhumanism a bit, well, weird. And it is weird, don't get me wrong — but so are most emerging technologies. Do you think that your great grandparents weren't wigged out by the first television sets? Before it garnered the name "television," one of its inventors gave it the rather spooky name of "distant electric vision." Can you imagine the wariness in which passengers approached the first steam trains? Vast mechanical beasts that could pull hundreds of tons and moved far faster than the humble — but state-of-the-art — horse and carriage.

The uneasiness that surround new, paradigm-shifting technologies isn't new, and it has only been amplified by the exponential acceleration of technology that has occurred during our lifetime. If you were born 500 years ago, odds are that you wouldn't experience a single societal-shifting technology in your lifetime — today, a 40 year old will have lived through the creation of the PC, the internet, the smartphone, and brain implants, to name just a few life-changing technologies. It is unsettling, to say the least, to have the rug repeatedly pulled out from under you, especially when it's your livelihood at stake. Just think about how many industries and jobs have been obliterated or subsumed by the arrival of the digital computer, and it's easy to see why we're wary of transhumanist technologies that will change the very fabric of human civilization.

The good news, though, is that humans are almost infinitely adaptable. While you or I might balk at the idea of a brain-computer interface that allows us to download our memories to a PC, and perhaps upload new memories a la *The Matrix*, our children — who can use smartphones at the age of 24 months, and communicate chiefly through digital means — will probably think nothing of it. For the children of tomorrow, living through a series of disruptive technologies that completely change their lives will be the norm. There might still be some resistance when I opt to have my head spliced onto a robotic exoskeleton, but within a generation children will be used to seeing Iron Seb saving people from car crashes and flying alongside airplanes.

The fact of the matter is that transhumanism is just a modern term for an age-old phenomenon. We have been augmenting our *humanity* — our strength, our wisdom, our empathy — with tools since prehistory. We have always been spooked by technologies that seem unnatural or that cause us to act in inhuman ways — it's simply human nature. That all changes with the children of today, however. To them, anything that *isn't* computerized, digital, and touch-enabled seems unnatural. To them, the smartphone is already an extension of the brain; to them, mind uploading, bionic implants and augmentations, and powered exoskeletons will just be par for the course. To them, transhumanism will just seem like natural evolution — and anyone who doesn't follow suit, just like those fuddy-duddies who still don't have a smartphone, will seem thoroughly inhuman.

Sebastian Anthony, April 1, 2013
www.extremetech.com

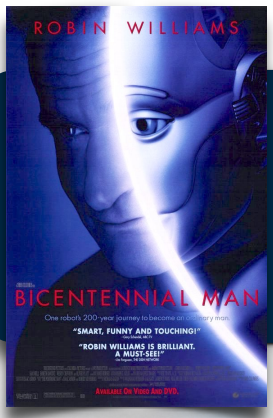
1. **Introduce the document**
2. **Define what is « transhumanism ».**
3. **Give the example of an experiment that was conducted to prove this theory.**
4. **What are the dangers of transhumanism?**
5. **Explain the relation between humans and tools.**
6. **Compare human evolution to technological evolution.**
7. **Describe people's reaction to the emerging technologies.**
   - Think about personal examples to illustrate this fact.
8. **« It is unsettling, to say the least, to have the rug repeatedly pulled out from under you, especially when it's your livelihood at stake »**
   - Explain this quote and do you feel concerned by this situation?
9. **What's the journalist's view upon the new generations and their relation to transhumanism?**

A GLIMPSE INTO THE FUTURE

BICENTENNIAL MAN
THE MOVIE ADAPTATION

the idea of progress

spaces and exchanges



BICENTENNIAL MAN

Directed by: Chris Columbus
Released in: 1999
Duration: 2h 12mn
Cast: Robin Williams, Embeth Davidtz, Sam Neill, Oliver Platt

"Bicentennial Man," follows the life and times of the title character, an android, who is purchased as a household robot programmed to perform menial tasks. The Martin family quickly learns that they don't have an ordinary robot as Andrew begins to experience emotions and creative thought. In a story that spans two centuries, Andrew learns the intricacies of humanity, life and love.

clip 1

1. Introduce the document
2. Can you explain the situation?
3. What type of family is it? Take into account the house and surroundings.
4. What's the reaction of the family when the box opens?
5. What is the robot's name given by the family? Why?
6. What does the robot do to introduce himself?
7. Identify and write these 3 laws.
8. In the basement, what happens between the father and the robot? Explain.

clip 2

1. Introduce the document
2. What is Richard Martin doing here?
3. How does Dennis Mansky call the Robot?
4. Why is this robot special? What are its characteristics?
5. What is « its » name?
6. What is special about the objects shown by Richard Martin?
7. Can you explain Dennis Mansky's reaction ? How does he qualify the robot?
8. Both men can't agree about the robot. Why?
9. What is Richard Martin's opinion about his robot?

answer the online quiz
myenglishclass.net/classes/terminales

THE BICENTENNIAL MAN
THE NOVEL

Congresswoman Li-hsing was considerably older than she had been when Andrew had first met her. Her transparent garments were long gone. Her hair was now close-cropped and her coverings were tubular. Yet still Andrew clung, as closely as he could within the limits of reasonable taste, to the style of clothing that had prevailed when he had first adopted clothing more than a century before.

"We've gone as far as we can, Andrew," Li-hsing admitted. "We'll try once more after recess, but, to be honest, defeat is certain and then the whole thing will have to be given up. All my most recent efforts have only earned me certain defeat in the coming congressional campaign."

"I know," said Andrew, "and it distressed me. You said once you would abandon me if it came to that. Why have you not done so?"

"One can change one's mind, you know. Somehow, abandoning you became a higher price than I cared to pay for just one more term. As it is, I've been in the Legislature , for over a quarter of a century. It's enough."

"Is there no way we can change minds, Chee?"

"We've changed all that are amenable to reason. The rest-- the majority-- cannot be moved from their emotional antipathies."

"Emotional antipathy is not a valid reason for voting one way or the other."

"I know that, Andrew, but they don't advance emotional antipathy as their reason."

"It all comes down to the brain, then," Andrew said cautiously. "But must we leave it at the level of cells versus positrons? Is there no way of forcing a functional definition? Must we say that a brain is made of this or that? May we not say that a brain is something-- anything-- capable of a certain level of thought?"

"Won't work," said Li-hsing. "Your brain is manmade, the human brain is not. Your brain is constructed, theirs developed. To any human being who is intent on keeping up the barrier between himself and a robot, those differences are a steel wall a mile high and a mile thick."

"If we could get at the source of their antipathy, the very source--"

"After all your years," Li-hsing said, sadly, "you are still trying to reason out the human being. Poor Andrew, don't be angry, but it's the robot in you that drives you in that direction."

"I don't know," said Andrew. "If I could bring myself--"

If he could bring himself--

He had known for a long time it might come to that, and in the end he was at the surgeon's. He had found one, skillful enough for the job at hand-- which meant a surgeon-- robot, for no human surgeon could be trusted in this connection, either in ability or in intention.

The surgeon could not have performed the operation on a human being, so Andrew, after putting off the moment of decision with a sad line of questioning that reflected the turmoil within himself, had put First Law to one side by saying "I, too, am a robot."

He then said, as firmly as he had learned to form the words even at human beings over these past decades, "I order you to carry through the operation on me."

In the absence of the First Law, an order so firmly given from one who looked so much like a man activated the Second Law sufficiently to carry the day.

- - -

Andrew's feeling of weakness was, he was sure, quite imaginary. He had recovered from the-- operation. Nevertheless, he leaned, as unobtrusively as he could manage, against the wall. It would be entirely too revealing to sit.

Li-hsing said, "The final vote will come this week, Andrew. I've been able to delay it no longer, and we must lose. And that will be it, Andrew."

"I am grateful for your skill at delay. It gave me the time I needed, and I took the gamble I had
"What gamble is this?" Li-hsing asked with open concern.
"I couldn't tell you, or even the people at Feingold and Martin. I was sure I would be stopped. See here, if it is the brain that is at issue, isn't the greatest difference of all the matter of immortality. Who really cares what a brain looks like or is built of or how it was formed. What matters is that human brain cells die; must die. Even if every other organ in the body is maintained or replaced, the brain cells, which cannot be replaced without changing and therefore killing the personality, must eventually die.
"My own positronic pathways have lasted nearly two centuries without perceptible change, and can last for centuries more. Isn't that the fundamental barrier? Human beings can tolerate an immortal robot, for it doesn't matter how long a machine lasts, but they cannot tolerate an immortal human being since their own mortality is endurable only so long as it is universal. And for that reason they won't make me a human being."
"What is it you're leading up to, Andrew?" Li-hsing asked.
"I have removed that problem. Decades ago, my positronic brain was connected to organic nerves. Now, one last operation has arranged that connection in such a way that slowly-- quite slowly-- the potential is being drained from my pathways."
Li-hsing's finely wrinkled face showed no expression for a moment. Then her lips tightened. "Do you mean you've arranged to die, Andrew? You can't have. That violates the Third Law."
"No," said Andrew, "I have chosen between the death of my body and the death of my aspirations and desires. To have let my body live at the cost of the greater death is what would have violated the Third Law."
Li-hsing seized his arm as though she were about to shake him. She stopped herself. "Andrew, it won't work! Change it back."
"It can't be done. Too much damage was done. I have a year to live more or less. I will last through the two-hundredth anniversary of my construction. I was weak enough to arrange that."
"How can it be worth it? Andrew, you're a fool."
"If it brings me humanity, that will be worth it. If it doesn't, it will bring an end to striving and that will be worth it, too."
Then Li-hsing did something that astonished herself. Quietly, she began to weep.

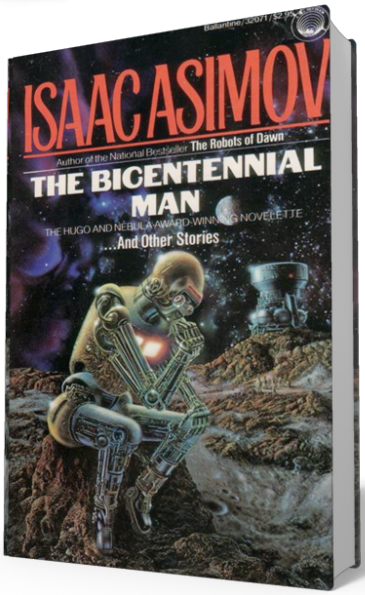
Isaac Asimov, The Bicentennial Man, 1976

1. **Introduce the document.**
2. **Who is Andrew?**
   - Quote to prove.
3. **What is his intention?**
4. **Can you explain why people won't give him what he's asking for?**
5. **What is to be human?**
   - Use the examples from the text.
6. **Finally, what does he decide? Why?**

make a link

7. **What is the relation between this text and the one before? «** Fountain of Youth: Progress in Slowing Aging, at Least in Mice **»**
8. **Can you link what happens to Andrew to the concept of « Transhumanism »?**

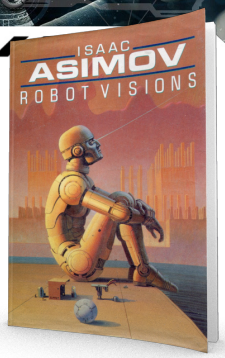
answer the online quiz
myenglishclass.net/classes/terminales



A GLIMPSE INTO THE FUTURE

CREATING THE FUTURE

the idea of progress | places and forms of power | spaces and exchanges



introduction by the author to the short story «robot dreams»

Science fiction has certain satisfactions peculiar to itself. It is possible, in trying to portray future technology, to hit close to home. If you live long enough after writing a particular story, you may actually have the pleasure of finding your predictions reasonably accurate and yourself hailed as a sort of minor prophet.

I began writing robot stories in 1939, when I was nineteen years old, and, from the first, I visualized them as machines, carefully built by engineers, with inherent safeguards, which I called "The Three Laws of Robotics." (In doing so, I was the very first to use the word "robotics" in print, this taking place in the March, 1942 issue of Astounding Science Fiction.)

As it happened, robots of any kind were not really practical until the mid-1970s when the microchip came into use. Only that made it possible to produce computers that were small enough and cheap enough, while possessing the potentiality for sufficient capacity and versatility, to control a robot at non-prohibitive expense.

We now have machines, called robots, that are computer-controlled and are in industrial use. They increasingly perform simple and repetitious work on the assembly lines —welding, drilling, polishing and so on—and they are of increasing importance to the economy. Robots are now a recognized field of study and the precise word that I invented is used for it—robotics.

To be sure, we are only at the very beginning of the robotic revolution. The robots now in use are little more than computerized levers and are very far from having the complexity necessary for the Three Laws to be built into them. Nor are they anything close to human in shape, so they are not yet the "mechanical men" that I have pictured in my stories, and that have appeared on the screen innumerable times.

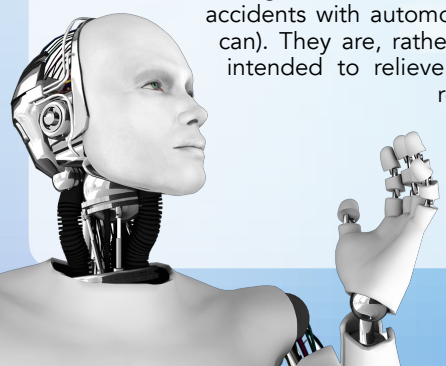
Nevertheless, the direction of movement is clear. The primitive robots that have come into use are not the Frankenstein-monsters of equally primitive science fiction. They do not lust for human life (although accidents involving robots can result in human death, just as accidents with automobiles or electrical machinery can). They are, rather, carefully designed devices intended to relieve human beings of arduous, repetitive, dangerous, non-rewarding duties so that, in intent and in philosophy, they represent the first steps toward my story—robots.

The steps that are yet to come are expected to proceed further in the direction I have marked out. A number of different firms are working on "home robots" that will have a vaguely human appearance and will fulfill some of the duties that once devolved on servants.

As a final example, in my story "Sally," published in 1953, I described computerized cars that had almost reached the stage of having lives of their own. And, in the last few years, we do indeed have computerized cars that can actually talk to the driver—although their abilities in this direction are, as yet, very simple.

Isaac Asimov
Robot Dreams, 1986

1. Introduce the document
2. Who is the narrator?
3. What do you understand about his interest concerning robots?
4. What is his vision about robotics?
5. How can you link his vision to the Idea of Progress?
6. What role do writers have to play in Progress?
7. Can you think of other examples of writers or authors who may have guessed our future?



answer the online quiz
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A GLIMPSE INTO THE FUTURE

CHINA'S SOCIAL CREDIT

the idea of progress | places and forms of power | spaces and exchanges

the odd reality of life under china's all-seeing credit score system

In the UK, credit scores are mostly used to determine whether people can get a credit card or loan. But in China, the government is developing a much broader "social credit" system partly based on people's routine behaviors with the ultimate goal of determining the "trustworthiness" of the country's 1.4 billion citizens.

It might sound like a futuristic dystopian nightmare but the system is already a reality. Social credit is preventing people from buying airline and train tickets, stopping social gatherings from happening, and blocking people from going on certain dating websites. Meanwhile, those viewed kindly are rewarded with discounted energy bills and similar perks.

China's social credit system was launched in 2014 and is supposed to be nationwide by 2020. As well as tracking and rating individuals, it also encompasses businesses and government officials. When it is complete, every Chinese citizen will have a searchable file of amalgamated data from public and private sources tracking their social credit. Currently, the system is still under development and authorities are trying to centralise local databases.

Given the Chinese government's authoritarian nature, some portray the system as a single, all-knowing Orwellian surveillance machine that will ensure every single citizen's strict loyalty to the Communist Party. But for now, that's not quite the case. Rogier Creemers, a researcher in the law and governance of China at Leiden University, has described the social credit setup as an "ecosystem" of fragmented initiatives. The main goal, he says, is not stifling dissent – something the Chinese state already has many tools for at its disposal – but better managing social order while leaving the Party firmly in charge.

Yet social credit isn't limited to the government and for the most part it has been operated by private firms. Ant Financial, the finance arm of e-commerce giant Alibaba, launched a product called Sesame Credit in 2015. It was China's first effective credit scoring system but was also much broader, functioning as a social credit scheme and loyalty programme as well.

Along with providing preferential loans, a high Sesame Credit score – which ranges from 350 to 950 – can result in a huge variety of benefits, like no-deposit apartment and bicycle rentals. While the system is undoubtedly popular, the line between private social credit schemes and the government is being increasingly blurred. China's supreme court, for example, shares a "blacklist" of people who haven't paid court fines with Sesame Credit, which in turn deducts users' scores until they sort out they pay up.

As both the private and public components of social credit expand in China, there's legitimate concern the system will end up creating an "IT-backed authoritarianism" unlike any other. One independent journalist has already been barred from buying plane tickets because of court fees related to his work, for example.

But, for now, it remains grimly captivating to see the benefits and rewards created by such an ambitious and potentially dystopian project.

Charles Rollet
June 5, 2018, wired.com

1. **Introduce the document**
2. **What is a « social credit »?**
3. **What is a dystopia? Does this system fit the definition?**
4. **Quote a few examples of how social credits can affect people's lives.**
5. **« *a single, all-knowing Orwellian surveillance machine that will ensure every single citizen's strict loyalty to the Communist Party* » Explain**
6. **What is Sesame Credit?**
7. **What is your opinion about it?**

answer the online quiz
myenglishclass.net/classes/terminales

Jumping healthcare waiting lists

China's hospitals, long notorious for stifling bureaucracy, are currently experimenting with social credit systems. In a bid to reduce wait times by up to 60 per cent, Sesame Credit is giving users with a score above 650 a 1,000-yuan (£117) credit at one Shanghai university hospital, letting them see a doctor without lining up to pay. The scheme is set to expand to hospitals in 10 more Chinese cities. But social credit is also being used to punish some patients and practitioners. Last year, Chinese health authorities announced that people guilty of violence against medical workers – a significant problem in China thanks to poor malpractice policies – would be placed on the country's national social credit blacklist. Also added to the blacklist were those running illegal plastic surgery outfits.

Punishments in virtual worlds

In 2015, Sesame Credit executive Li Yingun said playing 10 hours of video games a day would get a lower credit score than a responsible parent buying loads of diapers. But playing video games can lower your Sesame Credit score in a much more direct way – if you cheat.

Chinese citizens signing up for the wildly popular multiplayer shooter game *Counter Strike Global Offensive* must register using both their national ID and Sesame Credit score, according to state media outlet *CGTN*, and anyone caught using cheating software like 'Aimbots' which ensure perfect aim will have their Sesame Credit scores deducted, potentially affecting their real-life ability to get loans. "It's the worst punishment in history," Li Haiyi, vice president of Chinese game developer Perfect World, told *CGTN*.

Giving men access to women only dating groups

珍爱网
zhenai.com

In China, a high credit score can help you find a date. Zhenai.com, a dating service with 140 million users which is partly-owned by the American parent company behind Tinder, gives users with high Sesame Credit scores better visibility on their website. And in a Tinder-like move, dating giant Baihe.com lets users with high Sesame Credit show off their score to members of the opposite sex as long as they agree to display their scores as well.

Sometimes, though, mixing up social credit and dating goes too far. In late 2016, Alipay launched a new feature on its app called Circles which created women-only groups where only men with Sesame Credit scores over 750 could comment on women's posts – which they immediately did, mostly by asking for sex. The feature was widely-derided as digital prostitution – one blogger called it "Alipimp" – and it was soon taken down.

Skipping deposits for rentals

Good credit can make city living significantly easier in China. In some cities, people with high Sesame Credit scores can check into hotels, rent umbrellas, and even rent cars without paying a deposit. But it's not all about the rewards.

Chinese cities piloting government-run social credit systems punish a wide range of activities, potentially causing travel and government service restrictions. Recently the names of 169 people who have been banned from buying travel tickets were published by the government.

In the eastern city of Suzhou, for example, bus fare evasion, posting fake product reviews online, not paying your electric bill, and booking a room in a hotel without showing up all cause deductions in the city's 200-point social credit system. Possibly to make Suzhou's program feel a bit less Orwellian, the scheme is named after a flower popularly used in teas and cakes.

Banning social gatherings

In a sign that the government is using the social credit system to deepen its control civil society, social credit is being harnessed to crack down on "illegal social organisations." The Ministry of Civil Affairs has announced it would take measures to blacklist people involved in such organisations, which were claimed to be largely fraudulent or copycat associations often using vague names in their titles like "international" to swindle people.

The regulation state that one's social credit would be affected if they were found to be involved in running such an organisation. But what makes a "social organisation" legal or illegal in China sometimes has a lot to with its political stance. China has cracked down on foreign-funded NGOs, while the same ministry attacking "illegal social organisations" recently required that the legal ones include Communist Party "building" in their charters to "ensure their correct political direction".

Stopping you eating

Since 2015 China's supreme court has shared a 'blacklist' of millions of people who defaulted on their court fines with Sesame Credit. In turn, Sesame Credit lowers these users' scores and even bars them them from making luxury purchases on the Alibaba-owned online marketplaces TaoBao and Tmall.

The system could go much further in the future. Thanks to the ubiquity of mobile payments in China, frequent debtors could eventually be barred from attempting to "buy breakfast, take a bus and look for jobs," one Chinese academic told *China Daily*. While that seems extreme, one woman in 2017 did get plastic surgery to escape debts worth 25 million yuan (about £2.9 million).

Chasing K-pop stars

Rabid K-pop fans be warned. After obsessed fans caused serious delays at Beijing's airport several times by rushing to meet their idols – including one incident where they managed to break into first-class – Chinese authorities passed a regulation that makes it possible to lower the social credit record of anyone found to have disrupted or blocked check-in counters and airport corridors.

Until then, fans were able to get away with their antics thanks to their large numbers and the fact that they bought cheap refundable tickets to enter secure areas, according to Chinese media reports. The new regulation also includes a potential one-year ban from flying and social credit penalties for a host of other bad behaviours, from forging boarding passes to stealing suitcases.